

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please replace paragraph [0017] on page 4 with the following paragraph:

[0017] The invention is particularly concerned with the construction and operation of the nozzle assembly 10. As shown best in Figures 2 and 3, the nozzle assembly 10 includes an inner tube 26 disposed about the axis A, [and] an intermediate or middle tube 28 disposed concentrically about the inner tube 26, and an outer tube 30 disposed concentrically about the intermediate tube 28, such that the tubes 26, 28, 30 all share the common axis A.

Please replace paragraph [0030] on page 9 with the following paragraph:

[0030] It is preferred that the air cap [20] 24 be fitted to the outer tube 30 in such manner as to accommodate a flow of air into the combustion chamber to form a protective boundary layer of air against the walls of the chamber during operation. The boundary layer operates to cool the walls of the chamber during operation, and serves to minimize or prevent the atomized wire feed material from applying itself to the walls of the combustion chamber 118. Instead, the flowing boundary layer of air moves the material across the surface and out through the opening 22. By reducing the heat and the sticking of wire feed material to the combustion chamber walls, the cost of maintenance and replacement of the air cap is greatly reduced.

Please replace paragraph [0031] on pages 9-10 with the following paragraph:

[0031] As shown best in Figures 3 and 5, the air cap 24 is preferably supported and allowed to rotate around the nozzle 10 by a porous bushing 122 which is disposed about the plug 108 on its inner diameter surface and mounts the air cap 24 about its outer diameter, defining an annular air gap 124 between an outer cylindrical surface of the outer tube 30 (or its plug extension 108) and an inner cylindrical surface of the air cap 24 which open to the combustion chamber 118 and axially downstream of the bushing 122. The bushing 122 is

formed with at least one and preferably a plurality of openings 126 to provide for the passage of air delivered at a predetermined flow rate through an annular space formed by the inner diameter of the rotating extension tube 128 and the outer diameter of the outer tube 30 of the nozzle 10 into the air gap 124 through the bushing 122. The concentric cylindrical walls of the air gap 124 sets up a column of air which flows along and parallel to the inner surface [128] 130 of the air cap [20] 24. The column of air is maintained across the entirety of the inner surface [128] 130 to protect the air cap [20] 24 and exits the air cap [20] 24 through the opening [20] 22. As also shown in Figure 3, the walls of the combustion chamber are curvilinear and without any abrupt changes in dimension or direction that would disturb the maintenance of the protective boundary layer, including any undercuts or pockets adjacent the opening 22 or other features that would effectively form an eddy that would disturb the flow of the boundary layer. The air also mixes with the combustion gases to some degree and reacts with the feed material to assist in the consumption of the feed wire.

IN THE ABSTRACT:

Please replace the abstract on page 13 with the following paragraph:

A nozzle assembly for a HVOF thermal metallic spray coating system includes an inner tube, a middle tube and an outer tube which are concentrically arranged about an axis of the nozzle assembly and are spaced to provide annular, concentric gas flow passages for oxygen and gaseous fuel along with a central wire feed passage in an efficient, compact arrangement. A [slided] slotted nib and plug are fitted to the discharge end at the assembly and defined, together with the middle tube, an annular premix chamber for the combustible gases, and a plurality of circumferentially spaced mixing slots and a downstream mix end portion of the nib where complete mixing of the gases occurs prior to entry into the combustion chamber provided in an air cap. An annular passage between the air cap and outer tube communicates with a high pressure air source for establishing an envelope of air against the inside surface of the air cap to serve as a protective barrier layer from the atomized metal.